Claims

1. Method for detection of endotoxin, comprising the steps:

   a) incubation of a sample with a bacteriophage tail protein, and subsequently

   b) detection of endotoxin bound to bacteriophage tail proteins by means of spectroscopic methods, ELISA, chemical or enzymatic detection reaction of endotoxins or cleaved-off endotoxin components, or by means of capacitance measurements..

2. Method according to claim 1, further comprising after step a) and prior to step b) the additional step

   a') separation of the bacteriophage tail protein-endotoxin complexes from the sample.

3. Method for detection of endotoxin, the method comprising the steps of:

   a) contacting a sample containing endotoxins with a surface, subsequently

   b) incubating of bacteriophage tail proteins with the endotoxin immobilised on the surface, and

   c) detection of bacteriophage tail proteins by means of spectroscopic methods, ELISA, chemical or enzymatic detection reaction of endotoxins or cleaved-off endotoxin components, or by means of capacitance measurements.

4. Method according to claim 3 further comprising after step b) and before step c) an additional step

   b') separation of said bound bacteriophage tail proteins from endotoxin.

5. Method according to any one of the preceding claims, wherein the bacteriophage tail protein is a protein of the short bacteriophage tail fiber or a coat protein of bacteriophages without tail.

6. Method according to claim 5, wherein the protein of the short bacteriophage tail fiber is selected from K3, T2, T4, Ox2, RB32-33, AR1, PP01 and RB69.

7. Method according to claims 5 or 6, wherein the bacteriophage tail protein has a homology of at least 60 % to T4p12 protein on the amino acid level.

8. Method according to any one of the preceding claims, wherein the bacteriophage tail proteins are modified.

9. Method according to any one of the preceding claims, wherein the bacteriophage tail proteins are covalently linked to enzymatically active proteins.

10. Method according to any one of the preceding claims, wherein the bacteriophage tail protein comprises a strep-tag or a his-tag.

11. Method according to claim 10, wherein the tag comprises an amino acid sequence according to SEQ ID NOS 5, 6 or 7.

12. Method according to claim 10 or 11, wherein the p12-protein of phage T4, K3, T2, Ox2, RB32-33, AR1, PP01 or RB69 is used as bacteriophage tail protein.

13. Method according to any one of the preceding claims, wherein the Ca^{2+} concentration is in the incubation 0.1 µM to 10 mM and/or the Mg^{2+} concentration is 0.1 µM to 10 mM.

14. Method according to any one of the preceding claims, wherein marked endotoxin is displaced from the binding with a bacteriophage tail protein and wherein the marked endotoxin is detected subsequently.

15. An endotoxin detection kit comprising a carrier coated with bacteriophage tail proteins, a container containing a reference endotoxin for measurement of a standard curve, a container with at least one further bacteriophage tail protein or an anti lipid A antibody.